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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/957,054 | 09/20/2001 | Steven E. Fairchild | P00-3286 | 5619 |

22879 7590 07/15/2004

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

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| EXAMINER |
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COLON, ROCIO

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| ART UNIT | PAPER NUMBER |
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2651

DATE MAILED: 07/15/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/957,054

Applicant(s)

FAIRCHILD, STEVEN E.

Examiner

Rocio Colon

Art Unit

2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,7,9-17,20-22,24,30 and 31 is/are rejected.
- 7) ☒ Claim(s) 4,8,18,19,25,26 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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DETAILED ACTION

Claim Objections

1. Claim 26 recites the limitation "said line track" in page 15, line 10. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-4, 6-7, 9-17, 20-22, 24, 26-28 and 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawamoto (USPN 5,590,298).

Regarding claim 1, Kawamoto discloses a disk drive system having an array controller that receives a write command from a host (column 2, lines 36-37), comprising: a write stack drive to receive said write command and to store write operations within said write command with write stack operations on a non-volatile cache memory (column 2, lines 38-40); and a normal drive to receive said write command and to execute said write operations within said write command (column 2, lines 41-42).

Regarding claim 6, Kawamoto discloses the said write stack drive comprises metadata to reflect data within said write stack drive (column 4, lines 17-23).

Regarding claims 7 and 13, Kawamoto discloses a disk drive that executes write commands on a storage media coupled to a normal drive, comprising:

an array controller coupled to a disk drive (column 2, lines 36-37),

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a write stack drive comprising a non-volatile cache memory (column 2, lines 38-40) having a plurality of tracks, wherein said plurality of tracks store data from write stack operations for said write commands (column 2, lines 39-41);

a metadata file to identify the data stored within said write stack drive (column 4, lines 17-23) and
a normal drive within the disk drive to execute writes operations for the write command (column 3, lines 23-25).

Regarding claims 3 and 9, Kawamoto discloses the write command stores data in a storage media or normal drive (column 2, lines 33-36).

Regarding claims 10 and 16, Kawamoto discloses a marker sector for each write stack operation stored within said write stack drive (column 4, lines 24-27)

Regarding claim 11, Kawamoto further discloses the marker sector includes a valid data flag (column 4, lines 27-32).

Regarding claim 12, Kawamoto discloses the said write commands are received from an array controller coupled to the disk drive (column 2, lines 36-37)

Regarding claims 4 and 14, Kawamoto discloses the said non-volatile cache memory comprises a plurality of tracks (column 2, lines 39-41).

Regarding claim 15, Kawamoto discloses a host to initiate said write command to said array controller (Fig. 1, element 11).

Method claims 17, 20, 22, 24, 26, 28 and 30-31 are drawn to the method of using the corresponding apparatus claimed in claims 1, 12, 4, and 13. Therefore method claims 17-20, 22, 24, 28, 26 and 30-31 correspond to apparatus claims 1, 12 and 4 and 13 are rejected for the same reasons of anticipation as used above.

Regarding claims 21 and 27 Kawamoto discloses the method further comprises updating a metadata file when said write stack operations are performed (column 4, lines 32-35).

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Allowable Subject Matter

4. Claims 2, 5, 8, 18-19, 23, 25 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rocio Colon whose telephone number is (703) 305-3947. The examiner can normally be reached on Mon-Thu 8:00a.m.-6:30p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (703)308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rcv
July 9, 2004


DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600